



DEPARTMENT OF THE ARMY

U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

CEMP-ET (1110)

20 Jan 97

MEMORANDUM FOR Commanders, Major Subordinate Commands,
ATTN: Directors of Engineering and Technical Services

SUBJECT: Roofing Design and Construction Issues - Policy Guidance

1. Roof repair and maintenance is one of the most costly items in the Army's O&M budget. Our customers are becoming increasingly concerned with the quality problems associated with new construction and maintenance problems of existing roofs. To address the concerns of our customers, we have initiated a study to find the root cause(s) of the problem and take appropriate action for improvements.

2. A workshop was held in Washington, D.C. on 28-30 January 1997 to kick off this study. The purpose of the workshop was to define the problem and exchange ideas for addressing customer concerns. The workshop was attended by representatives from several districts and divisions, CECERL, CECRRL, CECPW, ACSIM, installation DPWS, and various roofing industry associations. Feedback from the installations, along with the districts' experiences and industry's perspective, provided an excellent means of identifying areas where improvements are needed. With assistance from our experts in the districts and divisions, and in partnership with industry, we will be working areas needing attention and will issue new or revise appropriate criteria and/or guidance. As this process will require some time, a few issues dealing with processes need immediate attention and corrective measures should be implemented at once.

3. The issues outlined below are self-explanatory. Some, if not all, of the problems may have an understandable explanation such as time constraint, scarce funding, or lack of human resources. However, we feel it is within your purview to take appropriate steps to remedy these shortcomings.

a. Completeness of contract drawings -- There was universal agreement that districts are increasingly skimping on roof design details. This situation has become so prevalent that industry has coined a phrase for it: "RFO" - Roofer Figure Out! Originally, this practice may have been started in order to assure a generic design, but apparently it has gone too far. Drawings must have sufficient details to clearly convey required design features. The scope of work for A-E contracts must specify this requirement.

b. Design review -- It is our understanding that design packages are sometimes submitted for advertisement without proper reviews at various stages. A complete review of the submittals and

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the completed plans and specifications by Engineering Division is required. This is not to be mistaken with the BCOE review which is a separate and distinct requirement. The Louisville District has formed a roofing committee made up of highly qualified roofing specialists from Engineering and Construction to review all roofing designs. This has been very successful in improving the District's design and construction quality, and you may wish to explore establishing similar groups in your district.

c. Adherence to the Guide Specifications -- A task force comprised of district and division experts, in close coordination with roofing industry, worked for several years to develop the guide specifications for the Standing Seam Metal Roof (SSMR) system. With the exception of some "tweaking" on warranties and submittal requirements, which was surfaced during the workshop, this guide specification is a workable document. Yet, we constantly hear about some districts not adhering to this document and relaxing some of its requirements for various reasons. We have an effective way for the districts to raise questions or propose changes to our criteria documents through criteria feedback system (Form 3078). The SSMR task force is in the process of revisiting the guide specifications for the needed changes and any comments should be submitted as soon as possible. Unless this avenue is used, the guide specifications are to be followed.

d. Substitution during construction -- No substitution or deviations of roofing systems or their components is to be considered during construction without the knowledge, evaluation, and approval of the original designers. All submittal reviews will be done by the designers or the district resident expert.

e. Construction surveillance -- On complex roofing projects, the district must provide adequate/enhanced quality assurance during construction. This may require the allocation or resources necessary to maintain appropriate levels of presence at the site. The district must also assure that the contractor's organization is adequate to provide effective quality control inspection during roof installation.

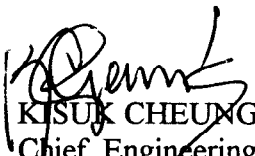
4. As one of the first steps in addressing the roofing concerns, we are arranging for a Corps-wide network of expertise. The purpose is to create a rapid means for exchanging ideas, and sharing experiences and lessons learned. An electronic bulletin using the Corps Groupwise or Internet devoted to roof design and construction issues will be established for linking these individual experts throughout the Corps. This will be a multi-disciplinary network made up of Architects, Civil and Structural Engineers from Engineering and Construction Divisions of the districts and divisions. Request you furnish the name(s) of individuals from your office not later than 12 March 1997 for inclusion in the distribution list. Once we have identified and established this network of experts, we will form various working groups to assist in revising and/or developing criteria for different roof systems.


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5. Military Programs points of contact are Mr. Ray Navidi, Engineering, (202) 761-0223, and Mr. John Reiley, Construction, 202-761-0204.

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